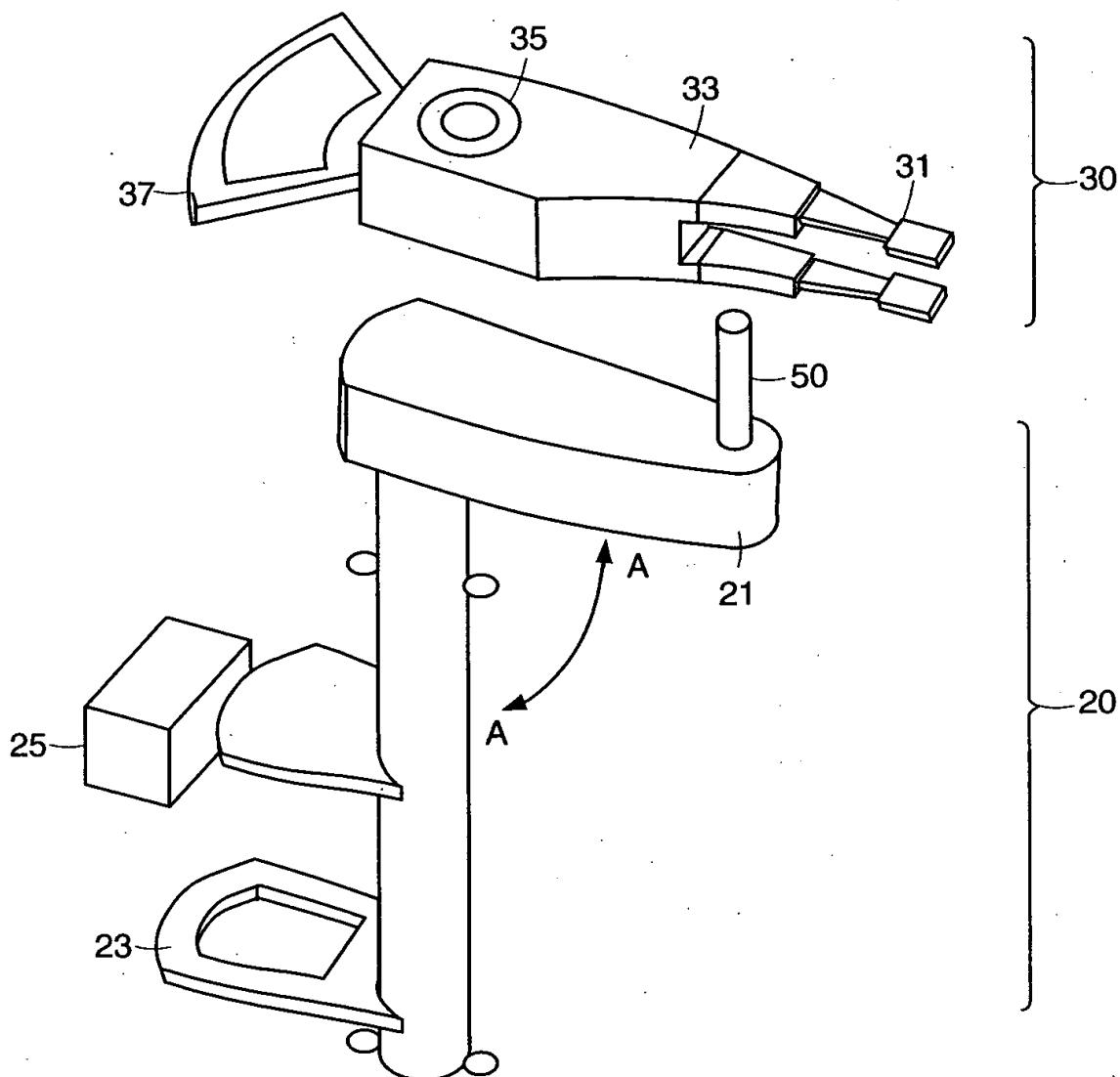
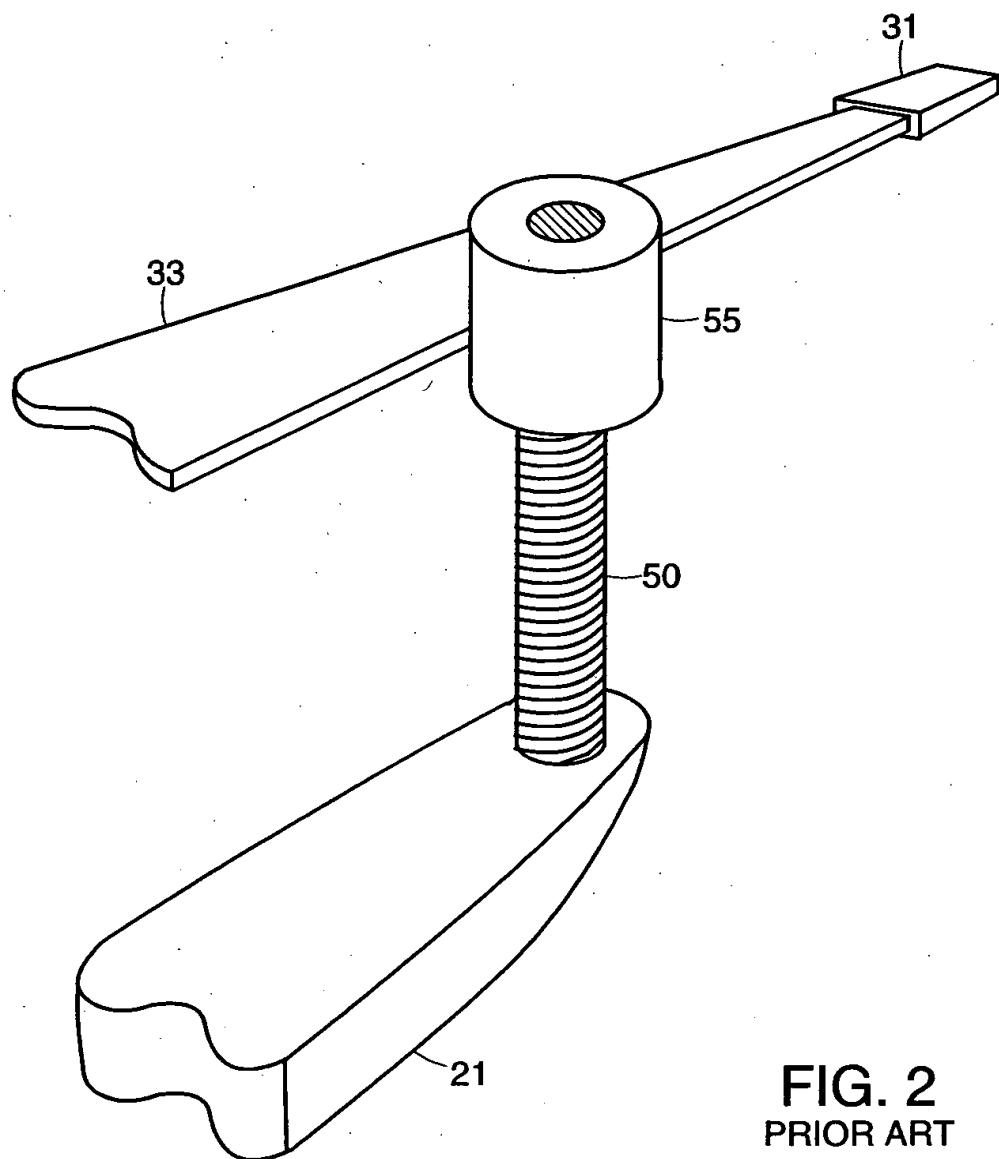


10

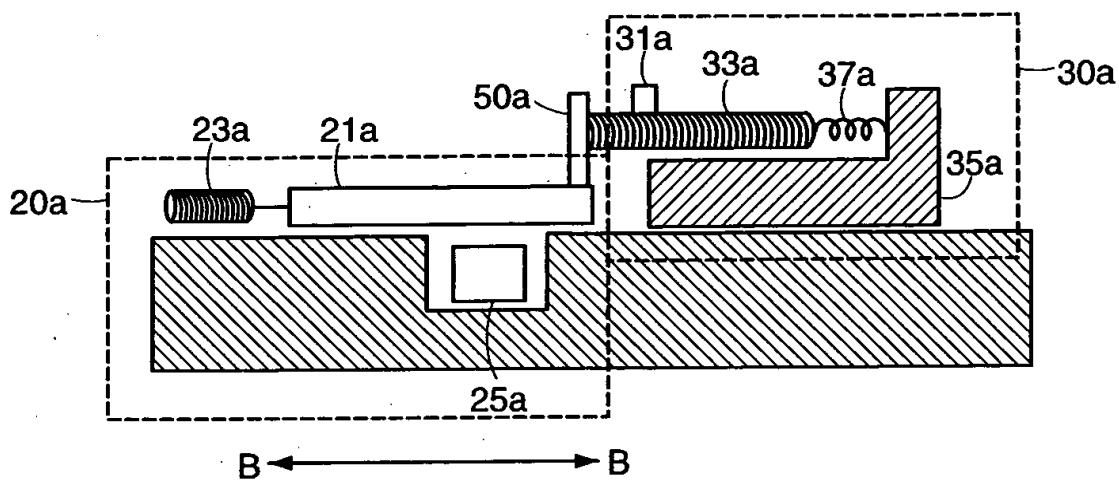


**FIG. 1**  
**PRIOR ART**

10'

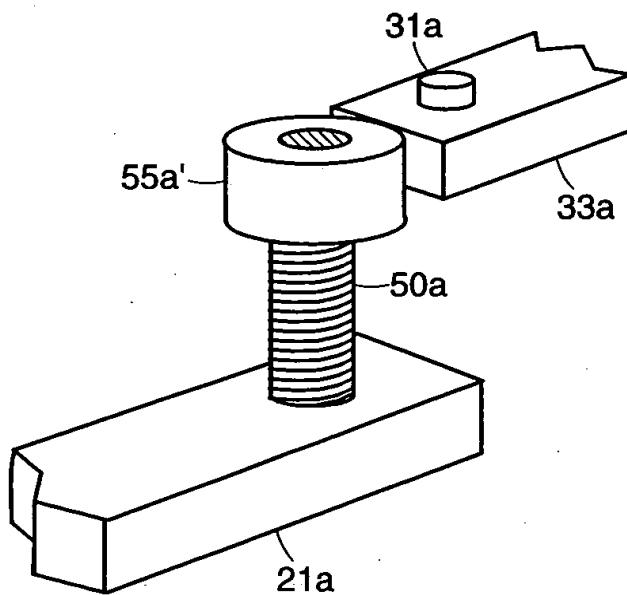


**FIG. 2**  
PRIOR ART

10a

**FIG. 3**  
PRIOR ART

10a'



**FIG. 4**  
PRIOR ART

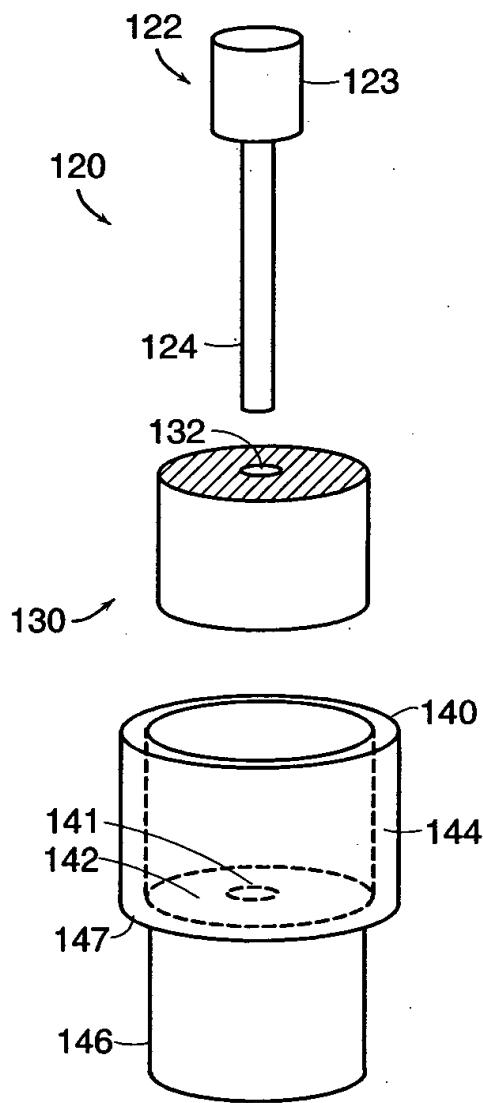


FIG. 5

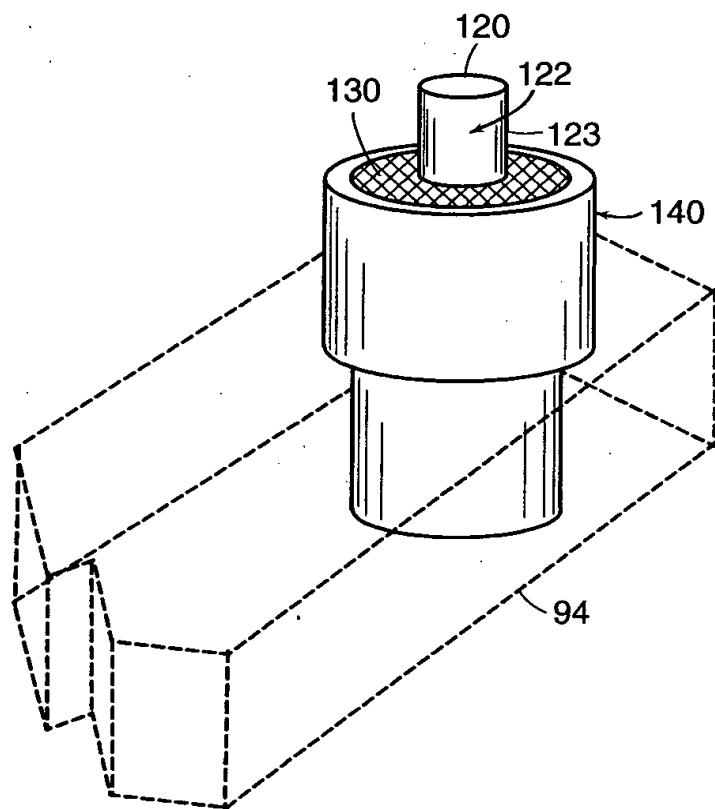
100

FIG. 6

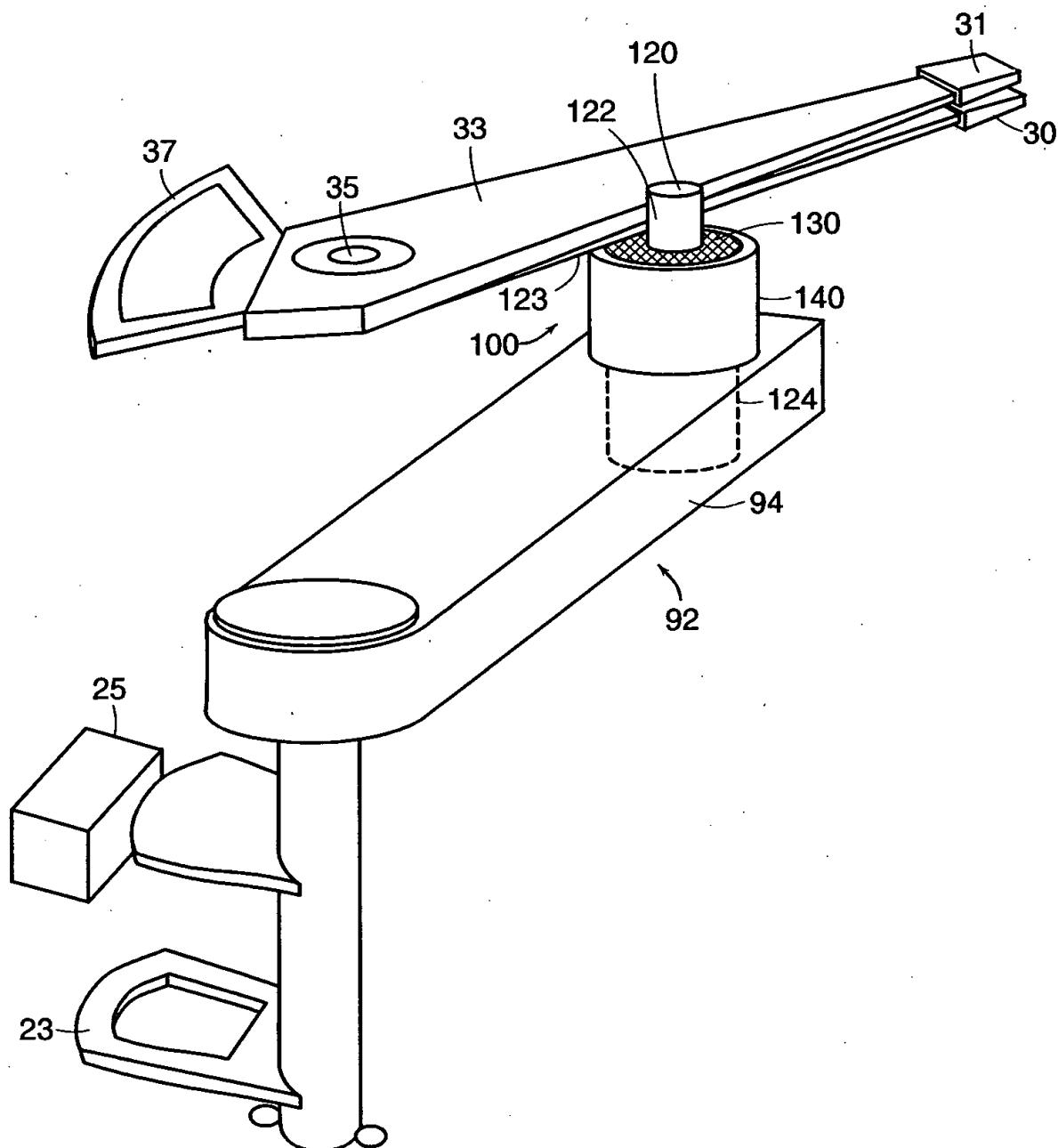


FIG. 6A

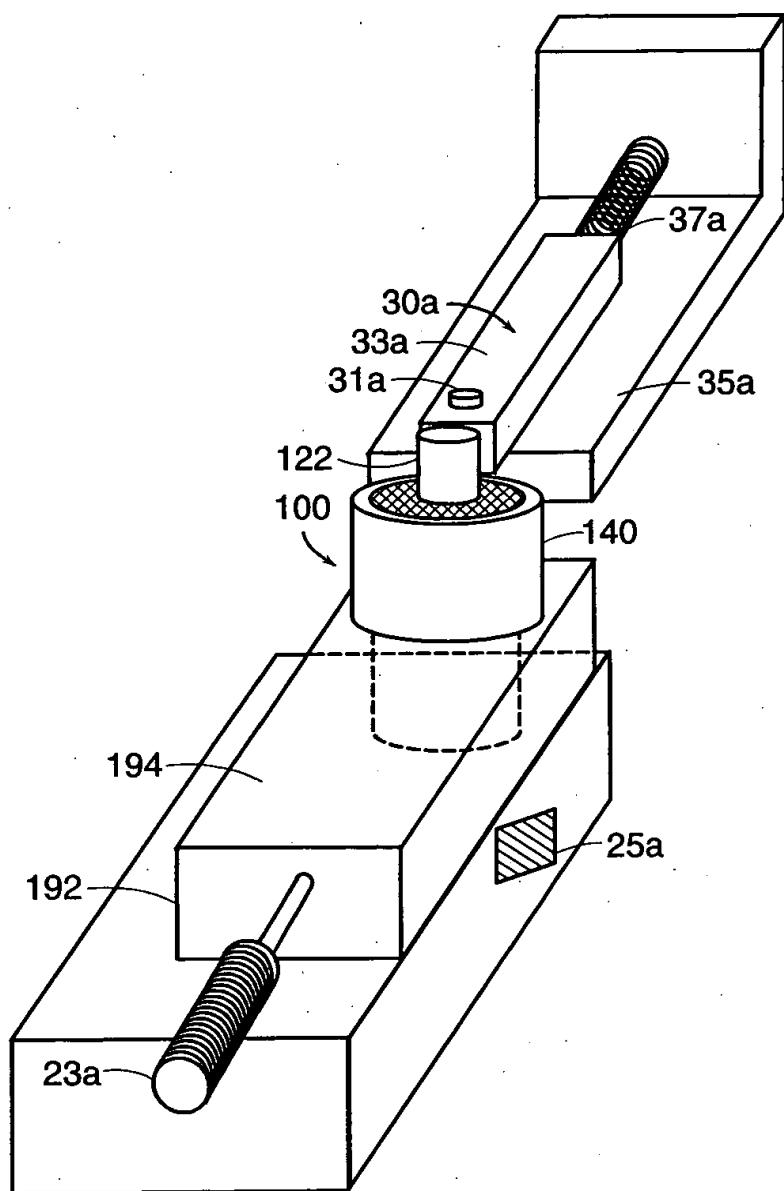


FIG. 6B

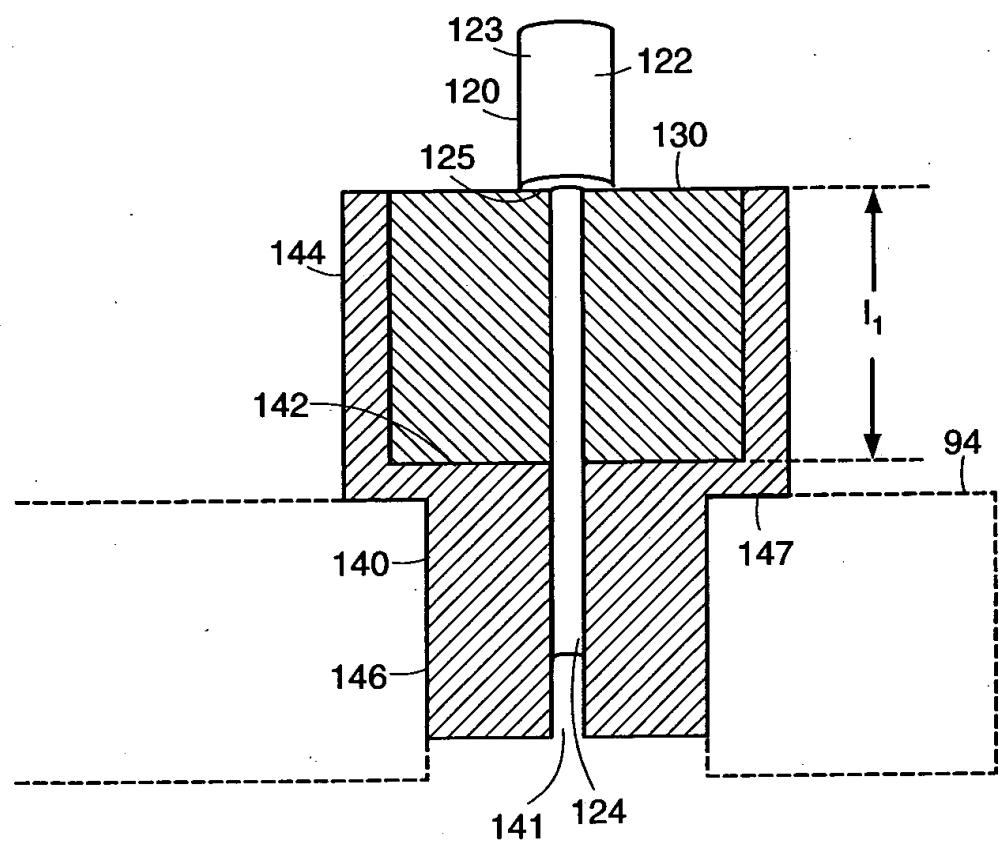


FIG. 7

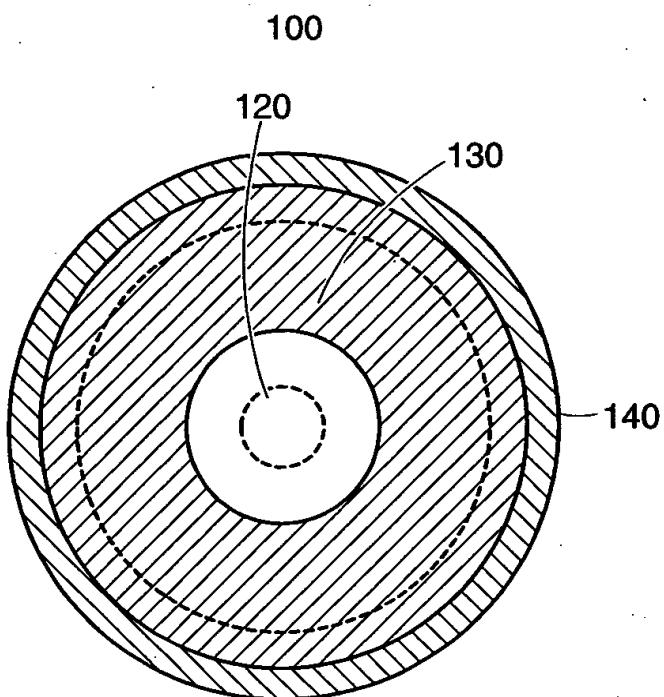


FIG. 8

002334-00000000

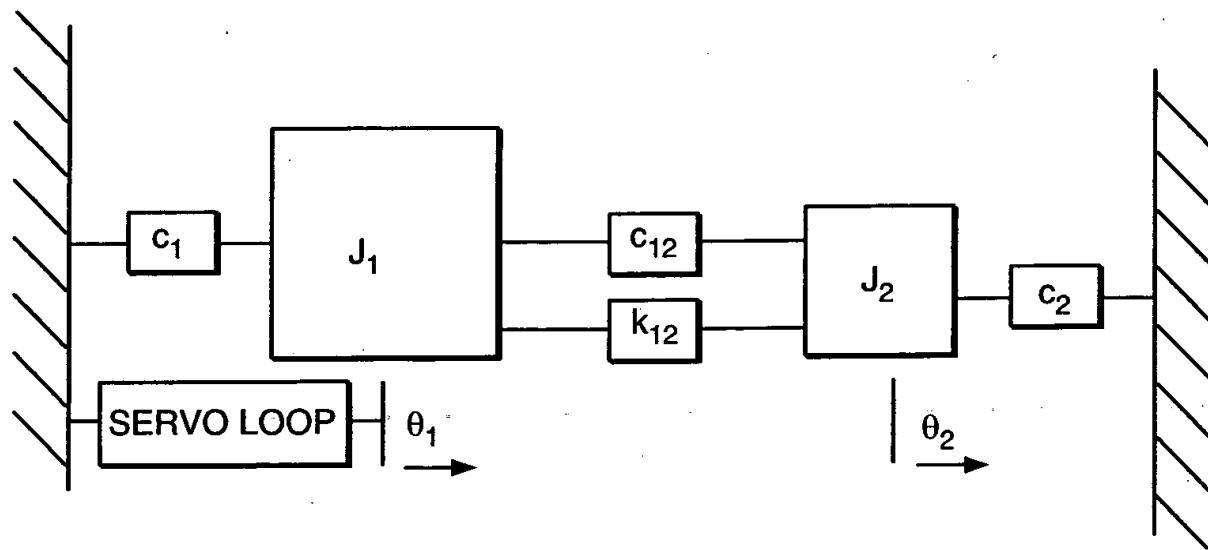


FIG. 9

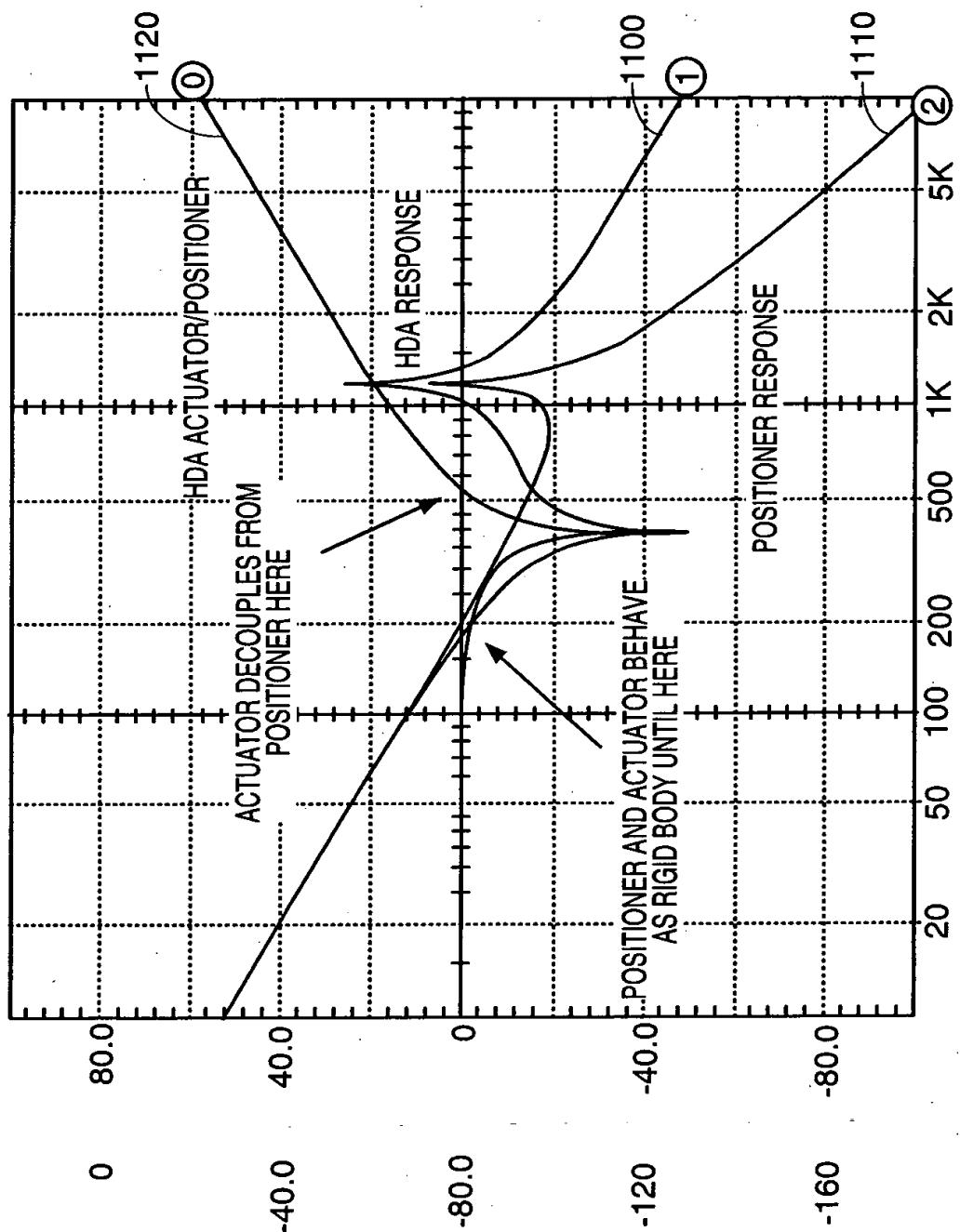


FIG. 10  
BODE RESPONSE WITH TORQUE DISTURBANCE AT HDA ACTUATOR

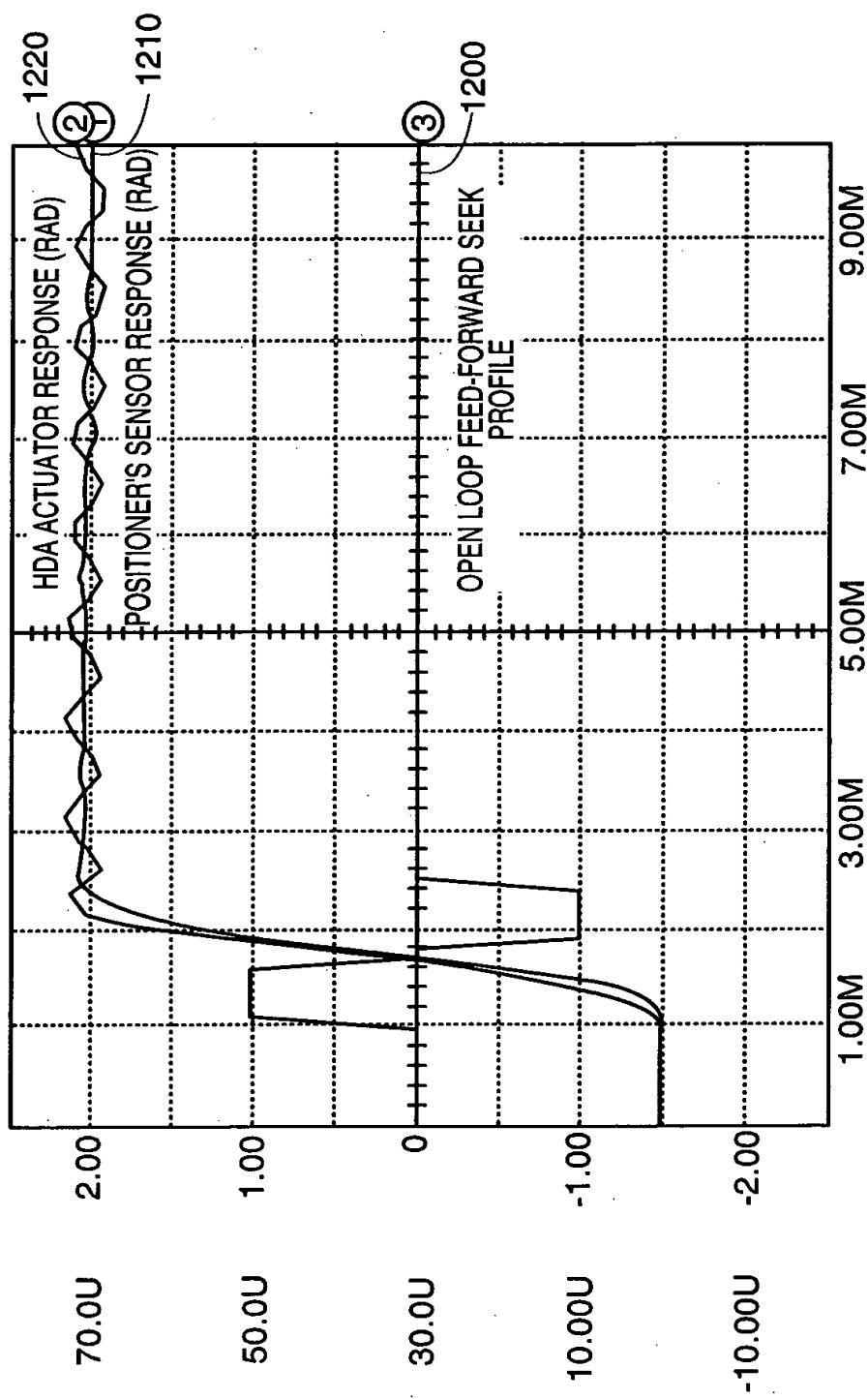
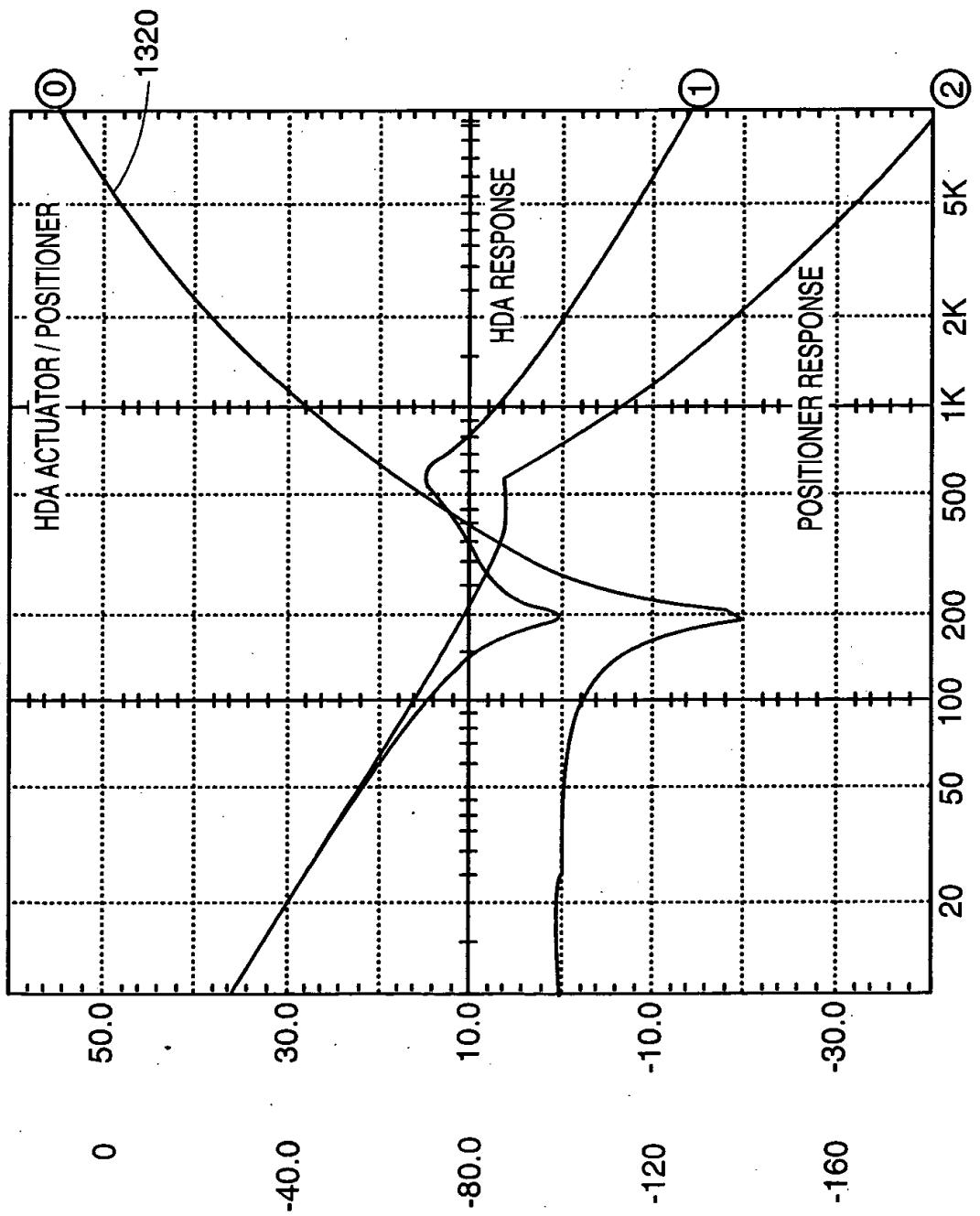


FIG. 11  
POSITIONER AND HDA RESPONSE WITH BANG-BANG  
SEEK PROFILE WITH STIFF PIN



RESPONSE DUE TO TORQUE DISTURBANCE AT HDA ACTUATOR  
WITH SOFT MATERIAL BETWEEN HDA AND POSITIONER

FIG. 12

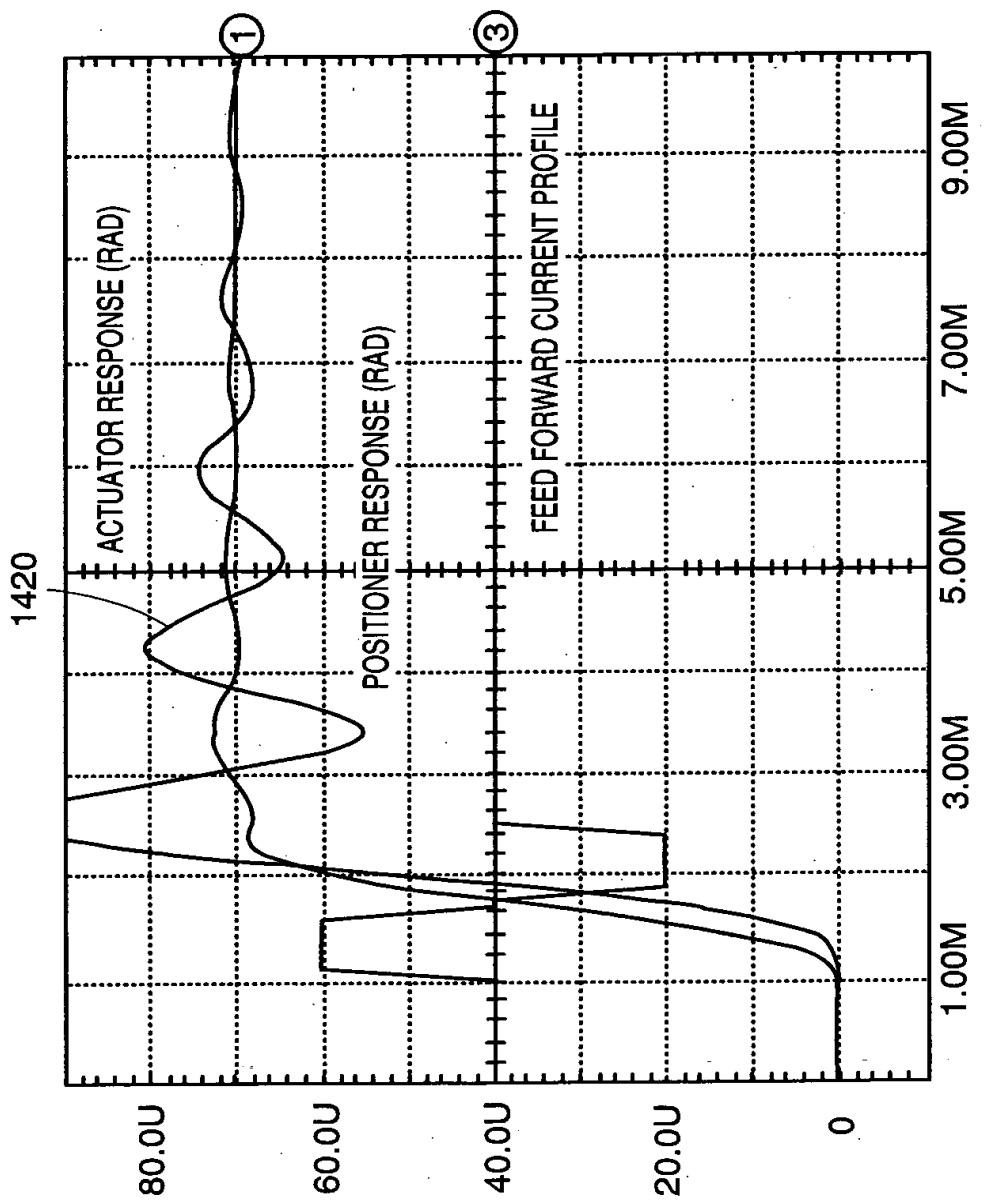


FIG. 13  
ACTUATOR AND POSITIONER RESPONSE FOR STANDARD  
BANG-BANG SEEK WITH SOFT MATERIAL

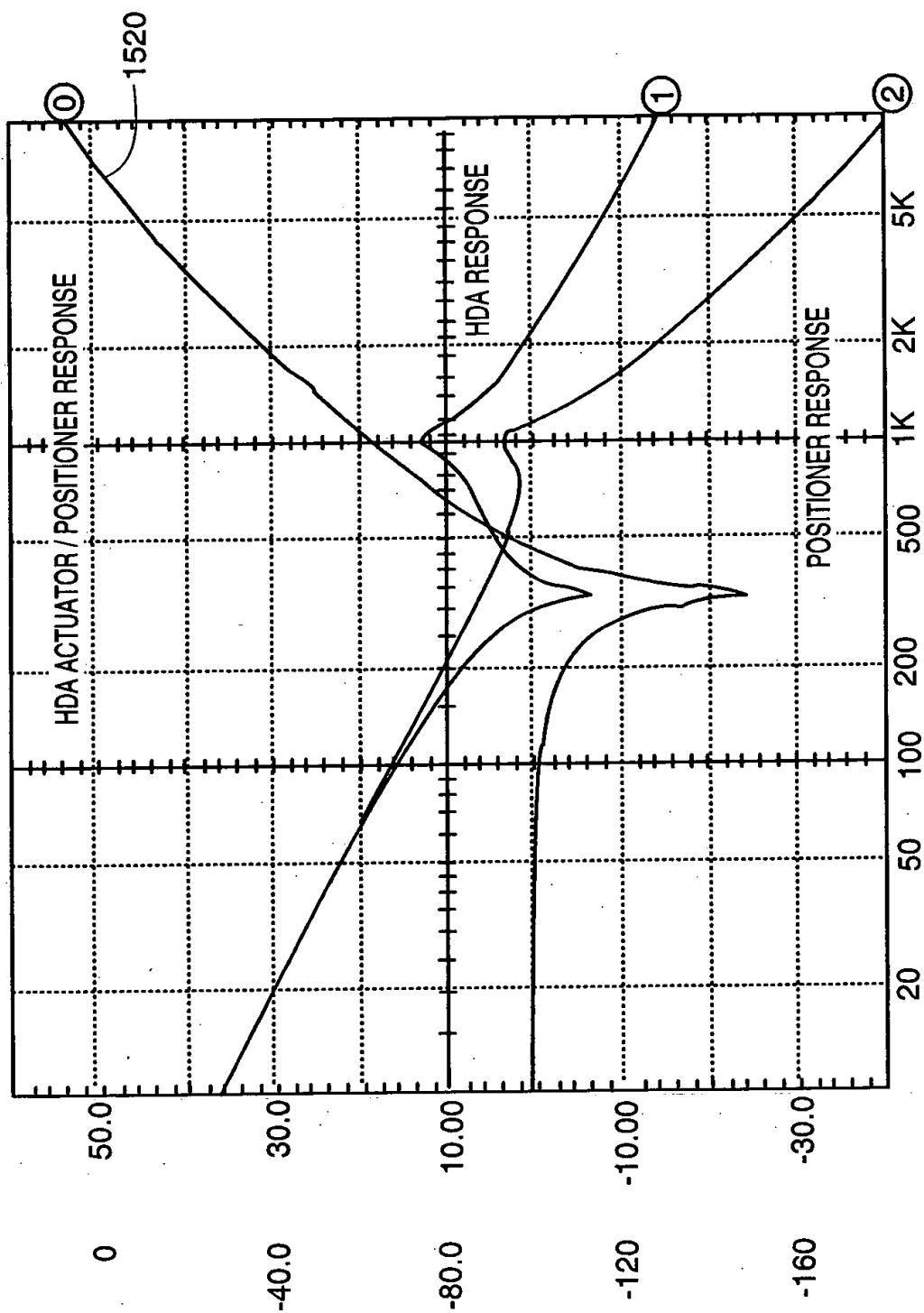


FIG. 14  
RESPONSE FOR TORQUE DISTURBANCE AT ACTUATOR WITH ENG PIN  
FREQUENCY IN Hz

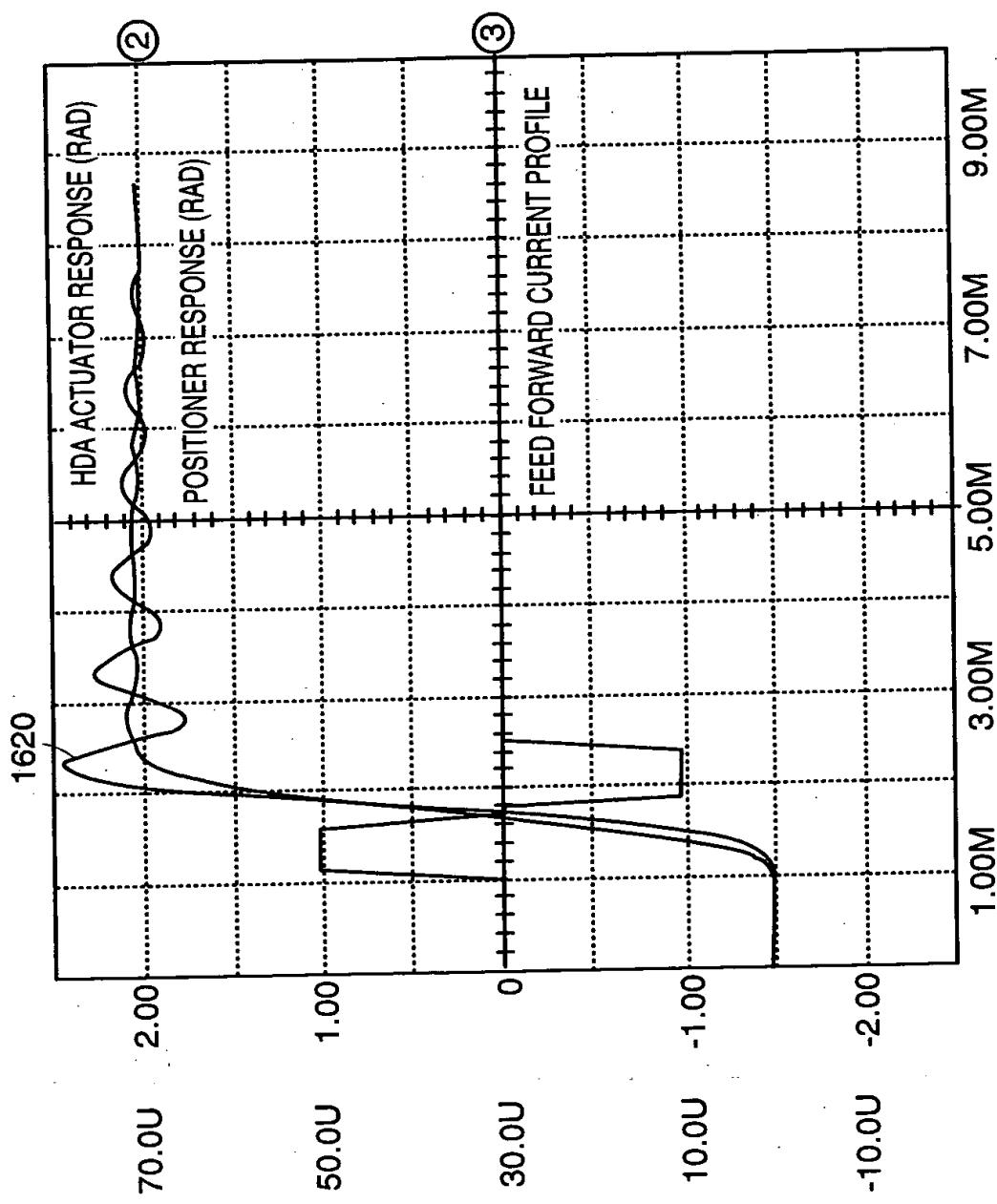


FIG. 15  
POSITIONER AND ACTUATOR RESPONSE WITH ENGINEERED PIN

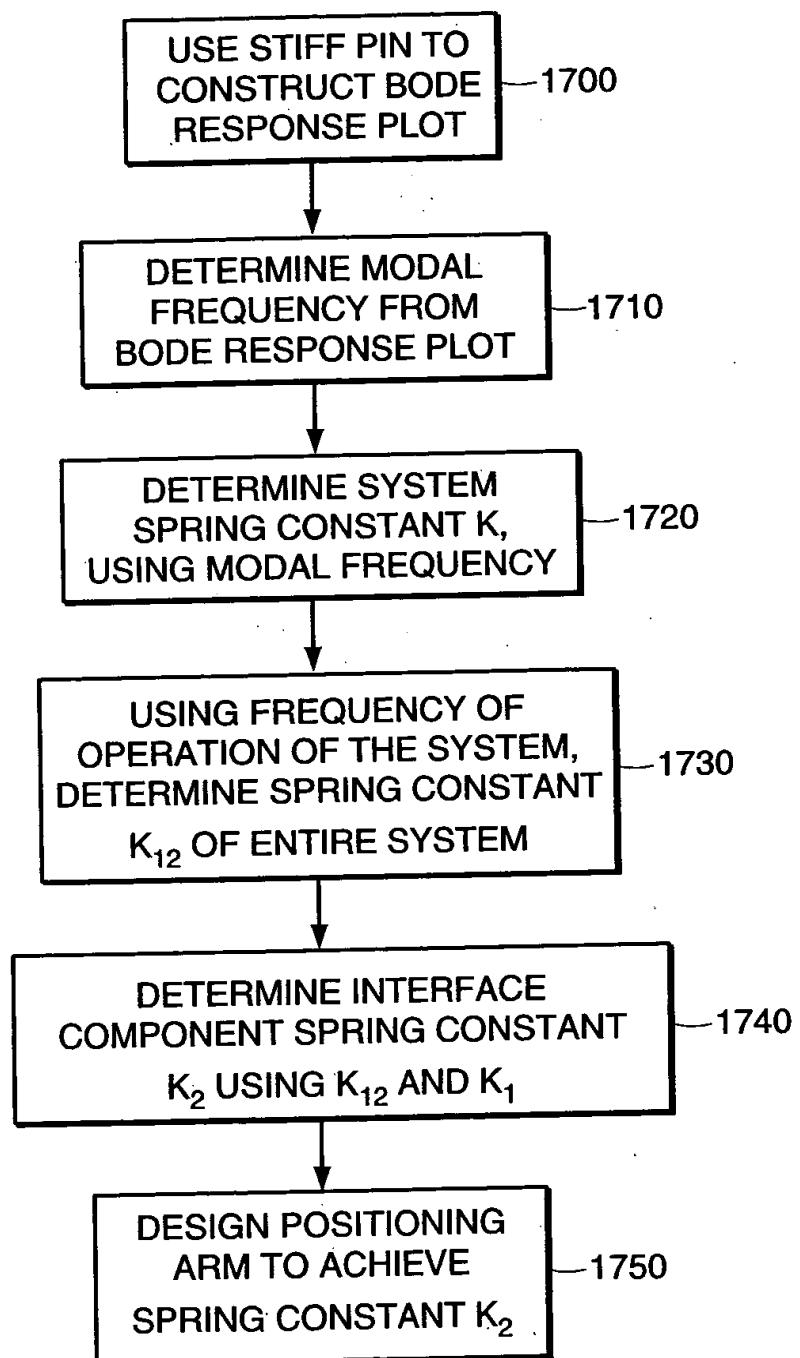


FIG. 16